SEP 04 2009

MARYLAND DEPARTMENT OF THE ENVIRONMENT
OFFICE OF BUDGET & FINANCING
FINDING OF NO SIGNIFICANT IMPACT (FONSI No. 114)

Project Name/Number: (Stimulus) Patapsco Waste Water Treatment Plant BNR/ENR Upgrade and Expansion Project Sanitary Contract Nos. 845, 852, and 855
Project Applicant: City of Baltimore
Project Location/County: City of Baltimore / City of Baltimore
Total Project Cost/Loan/Grant: $416,031,190/$113,081,000/$302,950,000

Project Description: The proposed project consists of the upgrade and expansion of the existing 73 million gallons per day (mgd) Patapsco Wastewater Treatment Plant (WWTP). The WWTP upgrade involves planning, design, and construction of Biological Nutrient Removal (BNR) and Enhanced Nutrient Removal (ENR). Upon completion of the upgrade, Patapsco will achieve annual average Total Nitrogen (TN) concentration of 4.0 mg/l, a TN concentration of 3 mg/l from May to October, and Total Phosphorous (TP) concentration of 0.3 mg/l based on average flows of 81 mgd. This represents an 83% reduction in TN and 85% in TP. This project also involves expansion of plant capacity from 73 mgd to the design capacity of 81 mgd identified in the City's Comprehensive Wastewater Facility Master Plan of 2002. Implementing nutrients removal at Patapsco WWTP is essential to the success of the Maryland's Tributary Strategy.

The City of Baltimore has applied for financial assistance under the Maryland Department of the Environment's State Revolving Loan Fund and the American Recovery and Reinvestment Act (ARRA) of 2009 for the proposed project as described above. In accordance with requirements for complying with the State Environmental Review Procedures (SERP) under COMAR 26.03.11 for such assistance, a review has been performed by the Department. The Department's review process indicated that either significant adverse environmental impacts would not result from the proposed project or such impacts have been eliminated by making changes to the project. This determination is based upon a careful review of the supporting documentation provided by the applicant and other documents available to the Department. In concert with this preliminary determination, the Department has also found the project to be consistent with the Maryland Economic Growth, Resource Protection, and Planning policy in accordance with Executive Order 01.01.1992.27, and Maryland's Smart Growth and Neighborhood Conservation Policy, in accordance with Executive Order 01.01.1998.04.

Consequently, a preliminary decision not to prepare an Environmental Impact Statement has been made. This decision has been made based on a careful review of the Environmental Information Document, prepared by the applicant, and other supporting information. This information and the Environmental Assessment are on file at the Department and additionally, have been made available for public review at the **City of Baltimore, located at 600 Abel Wolman Municipal Building, 200 Holiday Street, Baltimore, Maryland 21202.** Copies of the Environmental Assessment will be made available at cost upon request.

Comments supporting or disagreeing with this preliminary decision may be submitted for consideration by writing to:

Rajiv Chawla, Acting Division Chief
Bay Restoration Project Management Division
Engineering and Capital Projects Program
Office of budget & Financing
Maryland Department of Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

After evaluating the comments received, the Department will make a final decision no sooner than 20 calendar days from the date of this Finding of No Significant Impact. No administrative action will be taken with respect to this proposal during this timeframe.

Walid Saffouri, P.E., Program Manager
Engineering and Capital Projects Program
Office of Budget & Financing
Maryland Department of the Environment

Environmental Assessment
City of Baltimore Patapsco Waste Water Treatment Plant BNR/ENR Upgrade and Expansion
Sanitary Contract Nos. 845, 852, and 855
Grant Nos. NR 08.03, BRNR 02.03, WQSPF0844403L, WQSL0849204L

Proposed Project:

The proposed project consists of Biological Nutrient Removal (BNR) and Enhanced Nutrient Removal (ENR) upgrade and expansion of the existing Patapsco Wastewater Treatment Plant (WWTP) from 73 million gallons per day (mgd) to 81 mgd. The project will improve the existing wastewater treatment system and reduce nutrient loadings to Patapsco River and the Chesapeake Bay.

Purpose and Need:

The Patapsco WWTP is owned and operated by the City of Baltimore, and treats wastewater from the Baltimore City and surrounding Counties of Baltimore, Anne Arundel, and Howard. The plant employs grit removal, screening, and primary settling, followed by an activated sludge process (oxygen reactor tanks and secondary clarifiers), and chlorination and dechlorination for disinfection prior to discharging to the Patapsco River.

In 2001, the City agreed to design Biological Nutrient Removal facilities at the Patapsco WWTP, as part of a Consent Decree with the Department of Justice, the United States Environmental Protection Agency, and the Maryland Department of the Environment (MDE) relative to improvements to its wastewater collection system. In 2003, the State of Maryland initiated an Enhanced Nutrient Removal Program that set goals for discharge of treated effluent of Total Nitrogen (TN) of 3.0 mg/L and Total Phosphorous (TP) of 0.3 mg/L into bodies of water that are tributaries to the Chesapeake Bay. The City has agreed to strive to meet the goals of the ENR Program.

The Patapsco WWTP expansion is instrumental in providing adequate plant capacity to accommodate planned future growth within the existing service area, which has been designated by the State as a Priority Funding Area. The proposed 81 mgd expansion of the Patapsco WWTP is consistent with the City's Comprehensive Wastewater Facility Master Plan. The Patapsco wastewater treatment plant is required to meet its waste nitrogen load and phosphorous load based on a capacity of 81 mgd, which would require a discharge permit limits of less than 4.0 mg/l for TN annually and less than 0.3 mg/l for TP calculated on an annually average basis.

Evaluation/Selection of Alternatives:

Eight BNR processes were considered based on the following criteria: (1) ability to meet the BNR requirements; (2) capability of being constructed on the Patapsco site; and (3) operation and construction costs. There are a number of site constraints at the Patapsco WWTP which include limited site areas due to chromium-contaminated soils and the large chromium-soil stockpile, that influence the viability of treatment process options and increase costs of implementing BNR and ENR at the Patapsco WWTP.

Preliminary evaluations of the eight viable BNR process alternatives indicated it was likely that the Biological Aerated Flooded Filter (BAFF) nitrification process would be less expensive to construct at the Patapsco site than the Modified 2-Stage process which consists of anoxic and oxic reactors with recycled nitrate flow from the end of oxic reactor to the anoxic reactor. To confirm these evaluations, variations of Modified 2-Stage alternatives were developed and evaluated in an attempt to compare the costs of the Modified 2-Stage process with that of the BAFF.